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October 02, 2001

BY ELECTRONIC FILING

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street SW
Washington, DC 20554

Re: ***Written Ex Parte Comments***
XM Radio, Inc., Request for Special Temporary Authority to Operate Terrestrial Repeaters
FILE NO. SAT-STA-20010712-00063
Establishment of Rules and Policies for the Digital Audio Radio Satellite Services in the 2310-2360 MHz Frequency Band
IB DOCKET No. 95-91

Dear Ms. Salas,

Navini Networks Inc. **supports both** petitions of the Chief of the International Bureau filed by the Wireless Communications Association International, Inc. on September 28, 2001. First, the *Emergency Motion for Stay* of International Bureau's September 17, 2001 *Order and Authorization* granting XM Radio, Inc. special temporary authorization to commercially operate terrestrial repeaters in the spectrum licensed for SDARS and second, the *Petition for Reconsideration of STA* of the same.

The Digital Audio Radio Service has become of increasing concern to Navini Networks. Initially, our concerns were with respect to interference to neighboring frequency bands (as detailed in our Comments filed on August 23, 2001). These concerns are heightened as the track record of uncooperative behavior displayed by DARS licensees continues unchanged. These factors are certain to be detrimental to the success of current and future deployment of operating systems in this region of the spectrum.

Please except the attached *Ex Parte* comments into the record.

Respectfully submitted,

s/ **Brian Sutton**
Regulatory Engineer

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Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of)	
)	
Establishment of Rules and Policies)	IB Docket No. 95-91
for the Digital Audio Radio Satellite)	
Service in the 2310-2360 MHz)	
Frequency Band)	
)	
XM Radio, Inc.,)	
)	
Request for Special Temporary Authority)	File No. SAT-STA-20010712-00063
to Operate Terrestrial Repeaters)	
)	

COMMENTS OF NAVINI NETWORKS INC.

On September 28, 2001, the Wireless Communications Association International Inc. ("WCA") filed two petitions with the Chief of the International Bureau. Navini Networks Inc. ("Navini") supports both the Emergency Motion for Stay (the "Motion") and Petition for Reconsideration of STA (the "Petition") of the Bureau's *Order and Authorization* (the "*Order*") on September 17, 2001 that granted XM Radio, Inc. Special Temporary Authorization (the "STA") to commercially operate terrestrial repeaters in the spectrum licensed for Satellite Digital Audio Radio Service ("SDARS").

We completely agree with WCA that all operations of XM Radio must cease until such time that the Bureau can assure protection of the licensed Multipoint Distribution Service ("MDS"), Instructional Fixed Television Service ("ITFS") and Multichannel Multipoint Distribution Service ("MMDS") allocated spectrums.

1. Introduction

Navini Networks Inc. is a wireless system equipment manufacturer located in Richardson, Texas that is developing Space Division Multiple Access (SDMA) infrastructure to deliver zero install, high-speed, wireless broadband access ("BWA") to residential and business customers with unequaled coverage, lowest total cost of ownership, ultimate network scalability and most efficient spectrum usage. This evolutionary technology, using adaptive phased array antennas and digital beamforming

techniques, is the ideal solution for cost competitive high-speed broadband wireless access. Current designs include systems operating in MMDS and 2.4 GHz ISM bands, with WCS and other licensed band soon to follow.

As a wireless equipment manufacturer, protection of said systems and equally, the spectrum they reside in is of the utmost concern. To this end Navini is increasingly concerned with recent goings-on surrounding the addition of SDARS to the 2.3GHz to 2.6GHz spectrum. We feel that the viability of neighboring spectrum surrounding the SDARS allocated band for BWA system deployment is in jeopardy given (1) the real possibility of interference on licensed and unlicensed equipment and services in 300MHz of spectrum and (2) the uncooperative behavior displayed by XM Radio, Inc. when requested by an MDS licensee to provide location and technical information of terrestrial repeaters. Spectrum is, indeed, limited and must be preserved.

2. DARS high power repeater interference on neighboring BTS and CPE

The deployment of high power DARS repeaters could clearly result in harmful interference such as blanketing interference or “brute-force overload” on receivers currently tuned to the MMDS, MDS, ITFS, WCS and 2.4 GHz ISM spectrums. This fact has been supported quantitatively by Navini¹ and other equipment manufactures such as BeamReach² and Spike Broadband Systems³, licensees in WCS, MDS, and ITFS bands, as well as DARS licensees⁴ themselves. Navini would like to make clear that the adverse impact of said interference will impact BOTH the Base Transceiver Station (“BTS”) and the Customer Premise Equipment (“CPE”). For some reason, most interference concerns have been centered on interference to the BTS and the effects on the CPE have been downplayed. It should be understood, as a matter of fact, the CPE has as much , or greater probability of interference because, in most cases, there will be hundreds of CPE per a single BTS and current front-end filtering of a typical CPE will have less rejection to the DARS frequencies than the BTS. The CPE for our systems will be produced in high volumes at low cost and is the allowing factor for successful competition to current broadband access solutions, such as xDSL and Cable. The

¹ Docket IB95-91: Comments of Navini Networks Inc. (filed August 23, 2001)

² Docket IB95-91: Comments of BeamReach Networks Inc. (filed May 30, 2001) and *ex-parte* comments of BeamReach Networks Inc. (filed August 21, 2001)

³ Docket IB95-91: Comments of Spike Broadband Systems Inc., (filed May 23, 2001)

Commission must understand that interference protection of the CPE is as critical (or more critical) than interference protection of the BTS. Overloading or other interferences of either component of a BWA system can be equally detrimental to the success of that system and the service it provides. For this reason the rules governing interference protection of any allocated spectrum must reflect this fact.

3. SDARS system design Vs. BWA system design

SDARS is obviously an extremely different service than it's spectral neighbors residing in the 2.3GHz to 2.6GHz bands. An SDARS system is a one-way, audio, broadcast service that is currently being designed to there own specifications – not those specified by the Commission. On the other hand, the incumbent BWA systems such as MMDS, MDS, ITFS, and WCS are quite different. These systems provide two-way, high-speed, data and voice, service and are required to adhere to specific rules ordered by the Commission. Those requirements include output power caps, out-of-band emission levels and cooperation with spectral neighbors. These very different services working under different business models could cohabitate with a minimal amount of interference and system downtime, but for this to happen all things must be equal for all parties involved. The current and proposed BWA systems tuned to this 300MHz of spectrum (i.e. 2.3GHz to 2.6GHz) have been developed to operate at output powers of 2kW and thus with interferences of 2kW transmitters. This 2kW power cap has been the standard limit set by the Commission for years, therefore 20kW and 40kW susceptibility designs were never conceived, much less needed. The real question, here, is: Why should BWA systems operating in WCS, MMDS, MDS, and ITFS be required to design for interferences caused by high power transmitters, but are NOT afforded the luxury of transmitting at high power?

4. Spectral neighbors must be cooperative

SDARS must cooperate with WCS and WCS as well as MMDS must cooperate with MDS and ITFS. From the uncooperative behavior displayed by XM Radio, Inc. when requested by an MDS licensee to provide location and technical information of terrestrial repeaters, why does XM Radio feel that they do not have to cooperate with MDS licensees?

⁴ Docket IB95-91: Reply Comments of XM Radio Inc., including White Paper entitled "Potential Blanketing Interference from DARS Repeaters to WCS Receivers" (filed August 31, 2001)

The basis for consistent, successful wireless operation throughout history has been cooperation of fellow spectrum occupants. This concept has been encouraged, relied upon, and mandated by the Commission for years. The fact is, SDARS licensees who own 25MHz of spectrum are jeopardizing the current and future operations of 300MHz of other licensed and licensed bands. The rest of the spectrum has coexisted for years on one main premise – cooperation by neighbors in the spectrum. The lack of cooperation or even acknowledgement of MDS licensees by XM Radio is of great concern and raises serious questions about their willingness to be good neighbors now and in the future.

5. Summary

Navini Networks is seriously concerned about the possibility of very high power DARS repeater deployment and its' interference effects on BTSs and CPEs operating in the MMDS, MDS, ITFS, WCS and 2.4 GHz ISM allocated frequency bands. This concern was intensified by the unwillingness of SDARS to cooperate with Sprint's request for repeater information. The threat of interference compounded with a non-cooperative attitude causes Navini Networks to be very concerned with how interfering systems are being allowed to proceed with deployment. For this reason, Navini Networks agrees with WCA and supports the *Motion* and *Petition* filed with the Chief of the International Bureau on September 28, 2001. If XM Radio refuses to be cooperative, the Commission must step in and mandate cooperation to adequately protect the MMDS, MDS, and ITFS airwaves for current and future BWA systems.

Respectfully submitted,

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